

Claims

1. Forward-reverse control device, comprising a housing (1), a rotatable input member (4), a rotatable output member (2), a gear set (10) for reversing the input rotation, as well as selector means (6-8, 15) for selectively connecting the input member (4) and the output member (2) directly or through the gear set (10), characterized in that the selector means (6-8, 15) are driveable by means of an electric actuator (16, 17, 21-24).

2. Device according to claim 1, wherein the electric actuator comprises an electric/mechanical converter for converting rotational motion into linear motion, e.g. a ball/screw mechanism (16) connected to an electric motor (24).

3. Device according to claim 2, wherein the linear screw mechanism (16) is a friction screw, a ball screw or a roller screw mechanism.

4. Device according to any of the preceding claims, the gear set is a planetary gear set (10), wherein each satellite gear (25) of the planetary gear set (10) is rotatably connected with respect to the housing (1), said housing (1) furthermore supporting the screw mechanism (16) and the electric motor (24).

5. Device according to claim 4, wherein the selector means (6-8, 15) comprises a toothed selector gear wheel (15) which is displaceable in axial direction, a first counter gear wheel (7) which is connected to the input member (4), a second counter gear wheel (6) which is connected to the output member (2), as well as a third counter gear wheel (8) which is connected to the ring gear (9) of the planetary gear set (10), the second counter gear wheel (6) being positioned between the first (7) and the third counter gear wheel (8) when seen in axial direction, said selector gear wheel (15) being displaceable between a first position engaging both the second (6) and the first (7) counter gear wheel, and a second position engaging the first (7) counter gear wheel.

6. Device according to claim 5, wherein the screw (17) of the screw mechanism (16) is rotatably supported with respect to two axially spaced support rings (18, 19), said support rings (18, 19) each being suspended with respect to the housing (1) by means of suspension rods (20) extending between the ring gear (9) and the sun gear (12) of the satellite gear set (10), and the nut (21) of the screw mechanism (16) is connected to the selector wheel (15).

7. Device according to claim 5 or 6, wherein synchronizer mechanisms (13, 14) are provided between the second (6) and the first (6) counter wheel as well as between the second (6) and the third (8) counter wheel.

8. Device according to claim 5, 6 or 7, wherein the input member (4) is connected to the sun wheel (12), and the third counter wheel (8) is connected to the ring gear (9) of the satellite gear set (10).